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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/711,234	11/13/2000	Naoki Kohara	10873.472USD1	6974

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EXAMINER
ALANKO, ANITA KAREN

ART UNIT	PAPER NUMBER
1765	5

DATE MAILED: 11/06/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/711,234	Applicant(s) KOHARA ET AL.	
	Examiner Anita K Alanko	Art Unit 1765	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 15-35 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 15-28 and 30-35 is/are rejected.

7)☒ Claim(s) 29 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 09/471,621 .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2,3 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Claim Rejections - 35 USC § 112

Claim 16 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "an adhesive film" on lines 3-4 lacks proper antecedent basis. Is this the same adhesive film cited in claim 15?

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 15, 17-18, 22-25, 34-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pitetti et al (US 4,374,159) in view of Ishihara et al (US 5,032,694).

Pitetti discloses a method for producing a thin film capacitor comprising:

forming a first metal electrode film 16, an inorganic high dielectric film 17 and a second metal electrode film 19 in this order on a substrate 10, using respective masks;

wherein the first metal electrode film and the inorganic high dielectric film are formed in contact with an adhesive film 15 on the substrate, thereby being integrated with the substrate by the adhesive film.

Pitetti does not disclose that the substrate is selected from the group consisting of an organic polymer and a metal foil; rather the substrate comprises alumina. However, Pitetti

discloses that any type of substrate compatible with film circuit fabrication may be utilized with the invention (col.2, lines 20-24),

Ishihara teaches that a functionally equivalent substrate for film circuit fabrication for alumina is a flexible resin substrate such as polyimide, which is an organic polymer (col.2, lines 39-43). Therefore, it would have been obvious to one with ordinary skill in the art to use polyimide as the substrate in the method of Pitetti because Ishihara teaches that it is functionally equivalent to alumina for film circuit fabrication.

As to claims 17-18, Pitetti discloses to form a metal adhesive film and forming the upper electrode includes vacuum evaporation (col.4, lines 54-60).

As to claims 22-24, Pitetti discloses to form the metal oxide adhesive film by depositing a metal film 14 forming by sputtering (col.3, lines 58-61), and then performing an oxidation process (col.4, lines 11+). It would have been obvious to one with ordinary skill in the art to oxidize by using an acid cited in claim 24 in the modified method of Pitetti because oxidation by exposing to an acid is a conventional oxidation technique. As to claim 22, Pitetti discloses that other metal oxide adhesive films may be used (col.4, lines 18-20), therefore it would have been obvious to use one of the cited techniques because they are conventional for forming metal oxide films.

As to claim 25, Pitetti discloses to form a metal adhesive film by vacuum evaporation (col.4, lines 54-57).

As to claims 34-35, examiner takes official notice that protective films formed by the cited technique are conventional in the art. It would have been obvious to one with ordinary skill

in the art to form a protective film using the cited method in the modified method of Pitetti because they are conventional in the art.

Claims 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pitetti et al (US 4,374,159) in view of Ishihara et al (US 5,032,694) and Kola et al (US 6,005,197).

The discussion of Pitetti modified by Ishihara from above is repeated here.

As to claim 16, Pitetti does not disclose that the second metal electrode is also in contact with the adhesive film. Kola teaches a useful configuration for thin film capacitors in which the second metal electrode 18 has an extended portion 19 that is in contact with the substrate 11. The advantage of having an extended portion 19 is that it allows for interconnection 27 to access buried electrodes (col.1, lines 35-41; col.3, lines 36-47). It would have been obvious to one with ordinary skill in the art to extend the upper electrode over the substrate in the manner taught by Kola in the modified method of Pitetti in order to allow for interconnection to the buried electrode.

Claims 15, 17-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pitetti et al (US 4,374,159) in view of Ishihara et al (US 5,032,694) and JP 08-78,283 A.

The discussion of Pitetti modified by Ishihara from above is repeated here.

As to claim 19, Pitetti discloses to form the dielectric by anodization, not by sputtering. JP 08-078,283 A teaches that a useful dielectric for a thin film capacitor is $(Ba_{0.5}Sr_{0.5})\ TiO_3$ by RF magnetron sputtering. The advantage is the ability to realize a small-sized high capacity thin film capacitor (see abstract). It would have been obvious to one with ordinary skill in the art to

use a dielectric formed by the method of JP 08-78,283 in the method of Pitetti in order to realize a small-sized high capacity thin film capacitor.

As to claim 20, JP 08-78283 teaches that the formation method is not limited to sputtering, but can include the sol-gel method, which is formed at a temperature up to 300 °C.

As to claim 21, since the modified method of Pitetti uses the same deposition method as the instant invention, it is expected to encompass the same rate of deposition.

Claims 15, 17-18, 22-28, 30-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pitetti et al (US 4,374,159) in view of Ishihara et al (US 5,032,694) and Lebow et al (US 4,159,222).

The discussion of Pitetti modified by Ishihara from above is repeated here.

As to claim 26, Pitetti does not disclose to form a peeling film. Lebow discloses a method comprising:

forming a peeling film 12 on a base of metal 14;

applying an organic polymer material 10 onto the peeling film; and

curing by light irradiation (col.3, lines 17+), thereby forming the substrate formed of organic polymer on the peeling film.

It would have been obvious to one with ordinary skill in the art to use the method of Lebow to form the substrate in the method of Pitetti because Lebow teaches that it is useful for forming fine line resolution printed circuits with removable substrates.

As to claims 27-28, examiner takes official notice that the conventional photoresist or photosensitive material used in the method of Lebow includes one selected from the Markush

group cited in claim 27, and the methods cited in claim 28 are conventional methods for forming them.

As to claims 30-33, Lebow discloses to peel, but does not disclose how. It would have been obvious to one with ordinary skill in the art to use the techniques cited in claims 30-33 because they are conventional methods of removing polymer films from substrates.

Allowable Subject Matter

Claim 29 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the closest prior art (Lebow) teaches to use a metal as the peeling film, not silicon oxide or silicon nitride, as in the context of claim 29.

Examiner's Remarks

The term "inorganic high dielectric film" is an accepted art term for refractory metal oxide films. Therefore the term "high" is not considered indefinite.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited art shows method of forming thin film capacitors.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anita K Alanko whose telephone number is 703-305-7708. The examiner can normally be reached on Monday-Friday,10:00 am-4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Benjamin L Utech can be reached on 703-308-3836. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9057 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Anita K. Alanko

Anita K Alanko
Primary Examiner
Art Unit 1765

AKA
November 4, 2002